Variation of bioactive compounds and antioxidant activity among three cultivars (B2, B10 and B17) of carambola (Averrhoa carambola L.) fruits

ABSTRACT

This study compared the variations of selected bioactive compounds and antioxidant activity among three cultivars (B2, B10 and B17) of carambola fruits harvested in Malaysia. The results showed that cv. B2 showed the highest ascorbic acid amount followed by cv. B17, whereas cv. B10 had the lowest content. On the other hand, cv. B17 contained the highest total carotenoid (TCC), total polyphenol (TPC), sugar, β-carotene and β-tocopherol contents. Carambola cv. B10 had significantly ($P<0.05$) higher content of gamma;- and ô-tocopherol. However, cv. B10 and cv. B17 did not show any significant difference in TCC, total flavonoid content (TFC), β-carotene and -tocopherol contents. As expected, cv. B10 and cv. B17 exhibited significantly ($P<0.05$) higher antioxidant activity than cv. B2 for both 2,2-diphenyl-1-picrylhydrazyi and ß-carotene/Iinoleic acid model assays. Score plot from multivariate analysis of the carambola cultivars and corresponding bioactive compounds showed a clear separation of clusters among cultivars.

Keyword: Bioactive compound; Antioxidant activity; Carambola fruit; Averrhoa carambola L.; Malaysia